

REMARKS

Claims 1-33 are pending in this application with claims 1, 6, 13, 20 and 22 being independent. Claims 1-12 have been withdrawn from consideration and claims 13 and 20-24 have been amended.

Independent claim 13 recites a method of manufacturing a semiconductor device. Claim 13 has been amended to recite that the method includes forming a ~~heat absorbing layer in an island form over a substrate, forming an insulating film over the heat absorbing layer, forming a non-single crystalline semiconductor film on the insulating film, irradiating the non-single crystalline semiconductor film with light so that the semiconductor film is melted and solidified, and patterning the semiconductor film into a semiconductor island that does not overlap with the~~ heat absorbing layer. Claim 13 further recites that a channel length direction of the semiconductor island is parallel to a longitudinal outer edge of the heat absorbing layer.

Claim 13 and claims depending from claim 13 have been rejected as being anticipated by Kawasaki. Applicant requests reconsideration and withdrawal of this rejection because Kawasaki does not describe or suggest (1) patterning a semiconductor film into a semiconductor island that does not overlap with a heat absorbing layer, or (2) having a channel length direction of the semiconductor island be parallel to a longitudinal outer edge of the heat absorbing layer, as recited in claim 13. In particular, as shown, for example, in Figs. 1A-1C, 2B, 2C, 4A, 4B, 6, 9A-9C, 10A and 10B, portions of the crystalline semiconductor film 106 (which the Examiner has equated with the semiconductor film) are left overlapping the gate electrodes 102 to 104 (which the Examiner has equated with the heat absorbing layer). Similarly, as shown in Fig. 8, and discussed at col. 15, lines 17-29, a longitudinal outer edge of Kawasaki's gate electrode 104 is perpendicular to the channel length direction (as defined between elements 167 and 168). Thus, since Kawasaki does not describe or suggest at least these elements of claim 13, the rejection should be withdrawn.

Claims 20-33 have been rejected as being obvious over Kawasaki in view of Sasaki. Similarly to claim 13, each of independent claims 20 and 22 recites (1) patterning a crystallized semiconductor film into at least one semiconductor island that does not overlap with a heat

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absorbing layer and (2) that a longitudinal edge of a heat absorbing layer is parallel to a channel length direction of the semiconductor island. Applicant requests reconsideration and withdrawal of the rejection of claims 20-33 in view of the comments presented above with respect to Kawasaki and further in view of the failure of Sasaki to remedy the failure of Kawasaki to describe or suggest the noted claim elements.

Attached is a marked-up version of the changes being made by the current amendment.

Applicant asks that all claims be allowed. Enclosed is a \$410 check for the Petition for Extension of Time fee. Please apply any other charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

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Version with markings to show changes made

In the claims:

Claims 13 and 20-24 have been amended as follows:

13. (Amended) A method of manufacturing a semiconductor device comprising **[the steps of]**:

forming a heat absorbing layer in an island form over a substrate;
forming an insulating film over said heat absorbing layer;
forming a non-single crystalline semiconductor film on said insulating film;
irradiating said non-single crystalline semiconductor film with light so that said semiconductor **[layer] film** is melted and solidified; and
patterning said semiconductor film into a semiconductor island, the semiconductor island not overlapping with the heat absorbing layer, [so that]
wherein a channel length direction of the semiconductor island is **[aligned with an]** parallel to a longitudinal outer edge of said heat absorbing layer.

20. (Amended) A method of manufacturing a semiconductor device comprising **[the steps of]**:

forming a heat absorbing layer comprising a metal **[and having one side edge]** over a substrate;
forming a first insulating film over said heat absorbing layer;
forming a non-single crystalline semiconductor film on said first insulating film;
irradiating said non-single crystalline semiconductor film with light to crystallize said semiconductor film wherein said semiconductor film is melted at least partly and a plurality of protrusions are formed on the crystallize semiconductor film;
patterning the crystallized semiconductor film into at least one semiconductor island to form a channel region, the semiconductor island not overlapping with the heat absorbing layer;
forming a gate insulating film on the **[channel region]** semiconductor island; and
forming a gate electrode on said gate insulating film,
wherein **[said side]** a longitudinal edge of said heat absorbing layer is approximately **[aligned with]** parallel to a channel length direction of said **[channel region]** semiconductor island.

21. (Amended) A method according to claim 20 wherein said **[semiconductor island is patterned so that said channel region does not cover said heat absorbing layer]** heat absorbing layer comprises a metal selected from the group consisting of Cr, Mo, Ti, Ta and W.

22. (Amended) A method of manufacturing a semiconductor device comprising **[the steps of]**:

forming a heat absorbing layer comprising a metal **[and having one side edge]** over a substrate;

forming a first insulating film over said heat absorbing layer;
forming a non-single crystalline semiconductor film on said first insulating film;
irradiating said non-single crystalline semiconductor film with light to crystallize said semiconductor film wherein said semiconductor film is melted at least partly and a plurality of protrusions are formed on the crystallize semiconductor film;
patterning the crystallized semiconductor film into at least one semiconductor island having a channel region therein, the semiconductor island not overlapping with the heat absorbing layer;
forming a gate insulating film on the **[channel region]** semiconductor island; and
forming a gate electrode on said gate insulating film,
wherein a longitudinal edge of the heat absorbing layer is parallel to a channel length direction of the semiconductor island, and
wherein said protrusions are formed so that first regions of said channel region has a larger number of said protrusions and second regions of said channel region has no or a smaller number of said protrusions, and said first and second regions appear in turn in a direction orthogonal to **[a]** the channel length direction of [said channel region] the semiconductor island.

23. (Amended) A method according to claim 22 wherein **[said channel region does not overlap]** said heat absorbing layer comprises a metal selected from the group consisting of Cr, Mo, Ti, Ta and W.

24. (Amended) A method according to claim 22 wherein said **[one side edge of the heat absorbing layer is aligned with said channel length direction]** a height of said protrusions is at least 30 nm.